

Executive Summary

1.1 Introduction

AES Highgrove, LLC (AES) proposes to construct, own, and operate an electrical generating plant in the City of Grand Terrace, San Bernardino County, California. The AES Highgrove Project (Highgrove Project) will be a natural gas-fired, simple-cycle, peaking facility rated at a nominal net generating capacity of 300 megawatts (MW).

This Application for Certification (AFC) for the Highgrove Project has been prepared in accordance with the California Energy Commission's (CEC's) Power Plant Site Certification Regulations (August 2000). This Executive Summary provides an overview of the Project in accordance with Appendix B, Section (a) of the regulations and includes figures taken from other sections of this AFC.

This AFC includes:

- A detailed description of the proposed Project
- An assessment of the Project's potential impacts on the existing environment
- Measures to mitigate Project impacts to assure that environmental issues are properly and responsibly addressed
- A discussion of compliance with applicable laws, ordinances, regulations, and standards (LORS) provided within the project description and each resource section

1.2 Project Overview

The proposed Highgrove Project will be a natural gas-fired, simple-cycle electrical generating facility rated at a nominal net generating capacity of 300 megawatts (MW). The facility will be located at 12700 Taylor Street, in an industrially zoned area in the City of Grand Terrace, San Bernardino County.

The proposed project will be located on property that was once part of Southern California Edison's (SCE's) former Highgrove Generating Station. The Generating Station was constructed in the 1950s and consists of four thermal generating units with a combined nominal capacity of 154 MW, cooling towers, boilers, tanks, and associated equipment. The station initially used both fuel oil and natural gas for fuel supply. Three large fuel oil storage tanks were located north of the generating equipment.

The project will consist of demolition of the existing plant, which is currently idle, and construction of the new Highgrove Project. The new facility will be located on a new 9.8 acre parcel that will include the area formerly occupied by the fuel oil storage tanks (Tank Farm Property) and a portion of the property currently occupied by the generating station equipment (Generating Station Property).

The Highgrove Project will have the following design features:

- Three GE Energy LMS100 combustion turbine generators (CTGs)
- Three two-cell mechanical draft cooling towers to increase gas turbine performance
- State-of-the-art emissions control systems consisting of selective catalytic reduction (SCR) and carbon monoxide (CO) catalysts and water-injected combustors
- Approximately 600 feet (mid-point to mid-point) of new 115-kV transmission line for interconnection to the adjacent Highgrove Substation, located within the current power plant boundaries
- Approximately 7 miles of new 12-inch diameter natural gas pipeline
- Extension of the existing potable water system for approximately 1,300 feet to provide potable water and fire protection to the facility using a line size up to 12 inches diameter
- The proposed cooling water supply source for the project will be water supplied by existing onsite wells, which were used by the former Generating Station.

Figure 1.1-1 shows the location of the project within the project vicinity. Figure 1.1-2 shows the project site and proposed routes for the gas line and potable water line. An aerial photograph showing the appearance of the site prior to construction is presented as Figure 1.1-3. An artist's rendering of the plant and transmission lines after construction is presented as Figure 1.1-4.

1.3 Project Ownership

AES Highgrove, LLC, is a wholly owned subsidiary of The AES Corporation. AES is a global power generation and distribution company, with over 30,000 employees and 123 power generation facilities.

Ownership of the Highgrove Project facility and transmission lines will be by AES Highgrove, LLC. As is consistent with SoCalGas' practice and CPUC law and regulation, the new natural gas pipeline constructed to serve the facility will be owned by SoCalGas. The potable water line will be owned by Riverside Highland Water Company, the local water purveyor for the City of Grand Terrace.

1.4 Facility Location

The plant site will be located at 12700 Taylor Road in Grand Terrace, California. The parcel is located in Section 6, Township 2 South, Range 4 West (San Bernardino South 7.5-minute Quadrangle). Parcel numbers and the names of the landowners within 1,000 feet of the site and within 500 feet of the linear corridors are included in Appendix 1B.

AES currently owns the Generating Station Property (Assessor's Parcel No. 1167-151-67-0000) through a wholly-owned subsidiary, Riverside Canal Power Company. The Tank Farm Property (the south portion of Assessor's Parcel No. 1167-151-63-1000) is currently under different ownership, having been sold by SCE to the City of Grand Terrace Redevelopment

Agency after removal of the oil storage tanks. Both land owners have an agreement to “exchange” parcels for mutual benefit: AES prefers the new facility be constructed with a greater setback from the road and the Redevelopment Agency prefers land with more developable frontage. The agreement provides that AES will remove existing equipment from the Generating Station Property. Once these demolition activities are complete, the Redevelopment Agency may, at its option, elect to take title to the Generating Station Property or be compensated in full for the Tank Farm Property. The Agreement further provides for a parcel line split and lot line adjustment such that the parties each retain title to a parcel of comparable size to the one they began with. After these changes, AES will own a 9.8-acre parcel, on which the new facility will be constructed.

1.4 Project Schedule

AES is filing this AFC under the CEC’s 12-month licensing process. Demolition activities would begin immediately after: 1) obtaining the license, assuming the project receives a license by the second quarter of 2007; 2) executing a power purchase agreement with a energy retail provider; and 3) completing project financing. Construction and demolition activities are expected to take approximately 15 months. Based on this schedule, pre-operational testing would be expected to commence in the second quarter of 2008, and commercial operation is expected to commence by third quarter 2008.

1.5 Project Alternatives

A “No Project” alternative was considered and rejected. The no project alternative fails to meet the basic project objectives as described in this AFC. In addition, the “No Project” alternative could result in greater fuel consumption and air pollution in the state because older, less-efficient plants with higher air emissions might be used to generate power instead of being replaced with cleaner, more-efficient plants such as the Highgrove Project. In addition, the Highgrove Project would produce power in an area of Southern California that has experienced high demand growth; therefore, increasing grid reliability and reducing dependence on imported power to serve the region’s needs. Alternative routes for the natural gas line were also reviewed and found to be less acceptable than the proposed route.

A main objective of the project was to use a site currently adapted to power plant use, to maximize use of existing infrastructure and minimize the distance required for transmission interconnection. Therefore, an evaluation of alternative sites focused on properties in close proximity to the existing Highgrove Substation and within the former SCE Highgrove Generating Station property boundaries. An evaluation of alternative sites within the former Generating Station boundaries was conducted and concluded that the preferred project site would allow the project to be constructed with greater setback from Taylor Street and below existing street grade, reducing the project’s visibility.

An alternative water supply analysis was conducted and concluded that there is currently no feasible alternative to using the existing onsite wells for power plant cooling. The analysis studied potential recycled water sources and impaired water sources. In addition to alternative water supply options, an analysis of dry cooling was studied and found to be infeasible.

Several alternative generating technologies were reviewed in a process that led to the selection of a modern, proven, combustion turbine simple-cycle arrangement for Highgrove using natural gas for fuel. The alternative technologies included conventional oil and natural-gas-fired plants, combined-cycle combustion turbines, biomass-fired plants, waste-to-energy plants, solar plants, wind-generation plants, and others. None of these technologies are feasible alternatives to the simple-cycle technology selected for Highgrove. A complete discussion of project alternatives is presented in Section 9.0 along with natural gas pipeline alternatives, and water supply alternatives.

1.6 Environmental Considerations

Sixteen areas of possible environmental impact from the proposed project were investigated. Detailed descriptions and analyses of these areas are presented in Subsections 8.1 through 8.16 of this AFC. With the implementation of reasonable and feasible mitigation measures, there will be no significant environmental effects. The potential effects of some key areas typically of greater interest to CEC staff and public are summarized briefly in this section.

1.6.1 Air Quality

The site is located in an area designated as nonattainment for State and federal ozone air quality standards, and for State fine particulate matter (PM10) standards and a federal nonattainment area for CO (carbon monoxide). The South Coast Air Quality Management District (SCAQMD) has requested re-designation of CO to a status of attainment. An assessment of the impact to air quality was performed using detailed air dispersion modeling. The potential air impacts from the Highgrove Project will be mitigated by the installation and operation of Lowest Achievable Emission Rate/Best Available Control Technology (LAER/BACT) for the combustion turbines and cooling towers. Emission reduction credits (ERCs) have and will be obtained to offset increases in emissions of volatile organic compounds (VOCs), PM10 and CO (if required). RECLAIM Trading Credits (RTCs) will be provided to offset oxides of nitrogen (NOx) emissions. Offsets will be obtained from the SCAQMD Priority Reserve and/or from the SCAQMD bank, or from other sources such as shutdowns, or non-traditional sources of emission reduction credits. The combination of the detailed air quality modeling analyses and these mitigation measures will result in the project having no significant adverse impact on air quality. See Subsection 8.1, Air Quality, for a detailed analysis.

1.6.2 Alternative Water Supply

The Highgrove Project will be a peaking facility and, at the maximum expected annual capacity factor of 30 percent, is anticipated to use approximately 358 acre-feet per year of water for process and domestic water needs including cooling tower makeup, evaporative cooling, irrigation, NOx water injection and potable use. Unlike a combined-cycle power plant, the Highgrove Project will use a relatively small amount of water for power plant cooling. Approximately 60 percent (about 209 acre-feet per year) of the total amount of water required to generate electricity will be used for power plant cooling.

The CEC encourages the redevelopment of existing “brownfield” power plant sites compared to constructing a new plant on a site not previously used for power plant

operations. Environmental benefits of this policy include replacement of old technologies with new, efficient, environmentally-friendly, generating technologies, siting plants in areas of existing industrial use, and location of power generation facilities near existing grid infrastructure and demand centers. While redevelopment of the former Generating Station offers these benefits, it also reduces the project's flexibility to site the plant near an existing recycled water service system.

Due to the lack of a feasible recycled or impaired water source to serve the Highgrove Project, water for cooling and operations will be provided by existing onsite wells that served historical power plant needs. AES is continuing to search for available and feasible alternatives to the use of the onsite wells. See Section 9.0, Alternatives for a detailed discussion of the alternative water supplies evaluated by AES.

1.6.3 Visual Resources

The most prominent features of the new Highgrove Project will be the exhaust stacks that will be 80 feet tall from the plant's base, which is approximately 10 feet below the grade of Taylor Street. The new project will include a berm, wall and landscaping to further reduce visibility from Taylor Street.

In addition, the Project will include demolition of the old generating station equipment. The existing generating station has an aged appearance and uses steam generation technology, which is characterized by tall prominent steel boiler structures and large cooling towers. The facility, built in the 1950s before Grand Terrace was incorporated, was constructed with minimal screening and minimal setback from Taylor Street. Therefore, demolition of the existing facility will improve the aesthetic environment along Taylor Street.

1.7 Key Benefits

The Highgrove Project results in the redevelopment of an existing "brownfield" power plant site, replacing aging and idle industrial equipment with a state-of-the art power generation facility. Specific benefits of the Highgrove Project include:

- Demolition of an aged facility and replacement with a modern facility with a less obtrusive visual presence. The project site has been selected to allow development farthest from the Taylor Street area.
- Replacement of an old, inefficient power generating facility with no environmental controls with a new facility having state-of-the-art emissions controls.
- Construction of an efficient, quick-start, peaking facility on a site currently adapted to power plant use
- Construction of a peaking facility in an area experiencing high demand growth, improving grid reliability and reducing dependence on imported power
- Use of an electricity generating technology that can generate power during times of peak demand, when other renewable resources such as wind turbines may be unable to produce electricity

- Minimal transmission line lengths resulting from siting the project adjacent to an existing substation
- Creation of up to 147 peak construction jobs
- Significant property tax revenues to both the City and the Redevelopment Agency

1.8 Persons Who Prepared the AFC

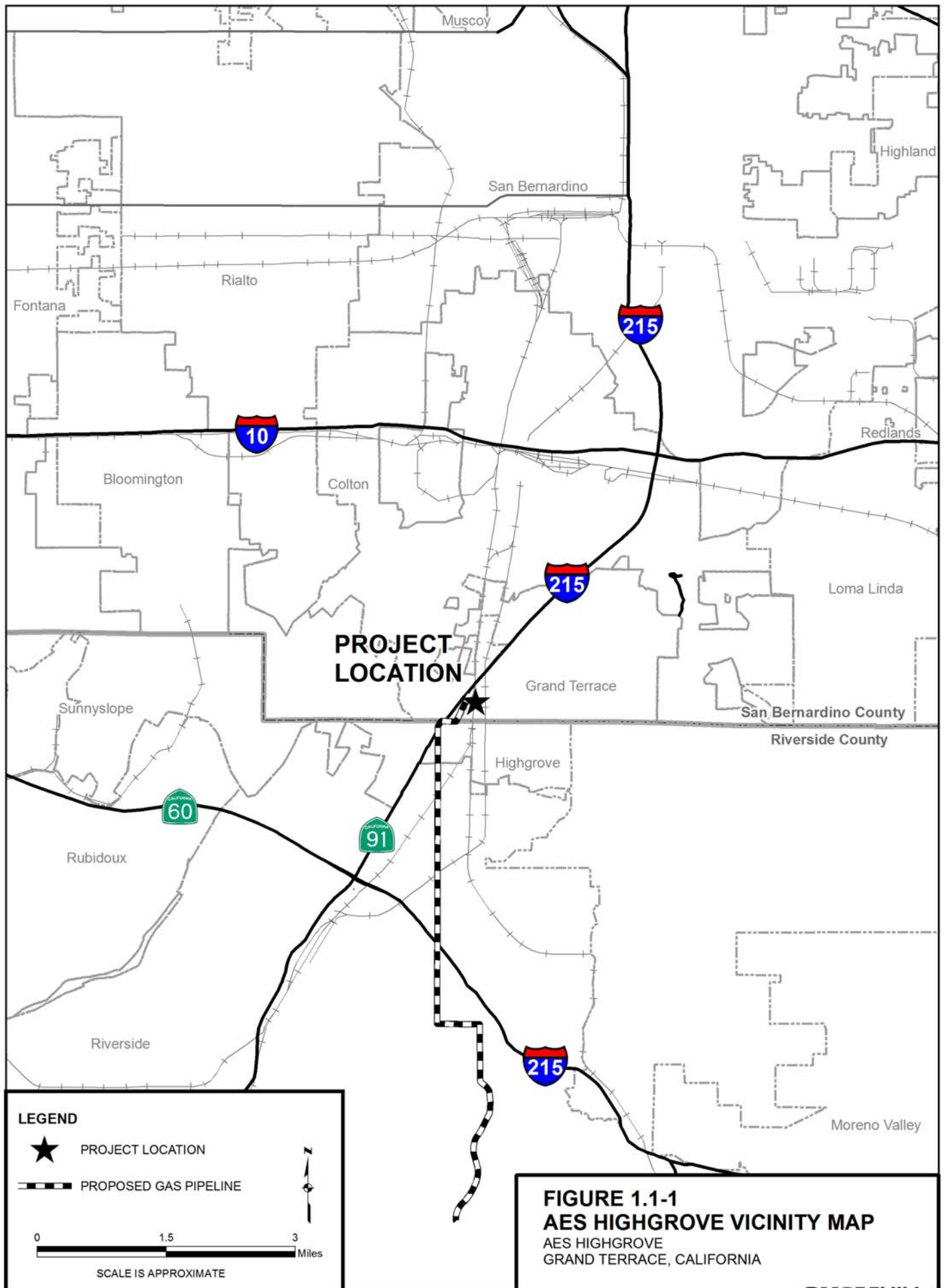
Persons with primary responsibility for the preparation of each section of this AFC are listed in Appendix 1D.

1.9 Laws, Ordinances, Regulations, and Standards (LORS)

Each section addresses the relevant LORS and addresses compliance with them.

1.10 Permitting Requirements

Each section provides a list of applicable federal, state, and local permits that would be required by each jurisdiction for the project.



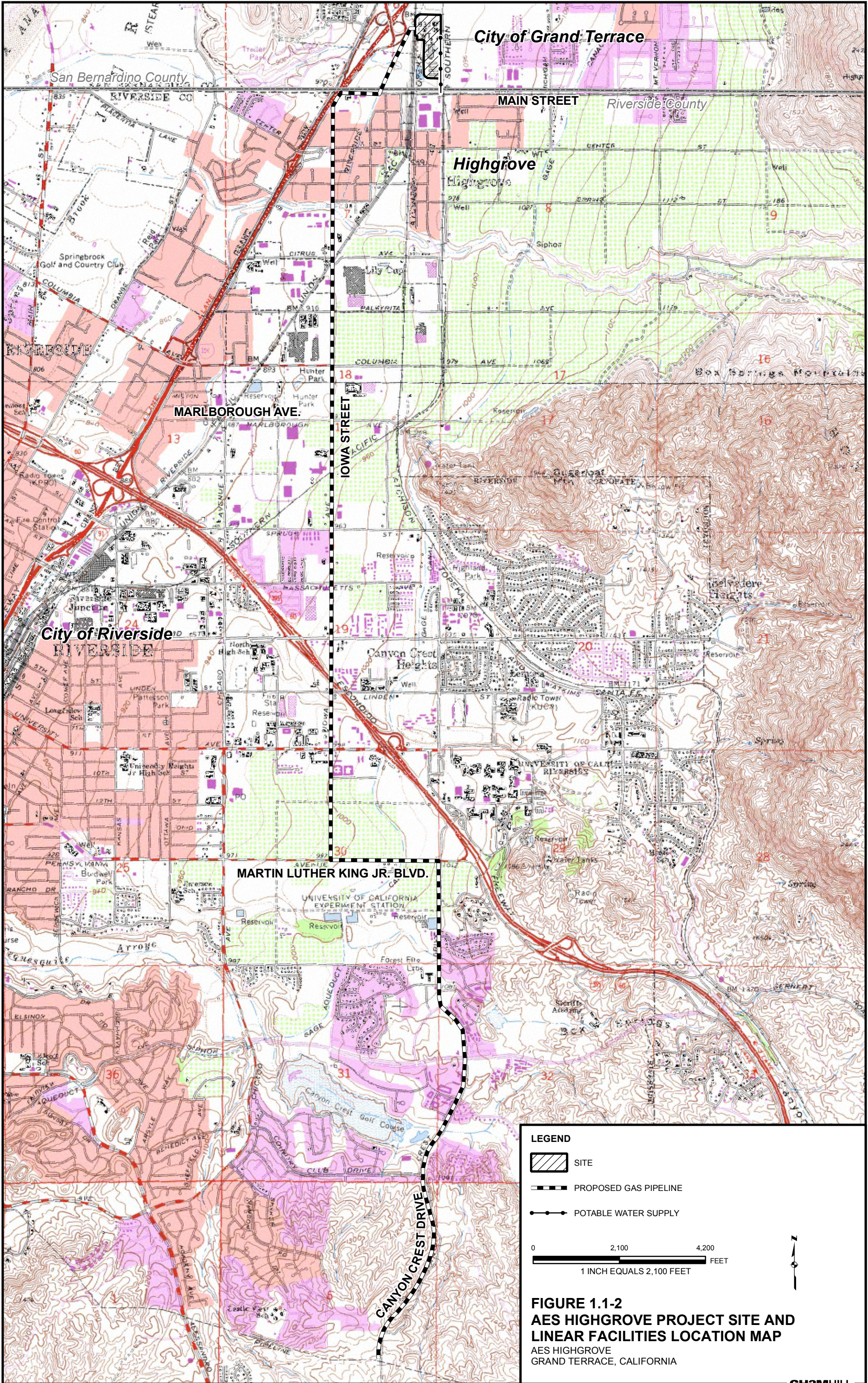




FIGURE 1.1-3
APPEARANCE OF
SITE BEFORE CONSTRUCTION
AES HIGHGROVE
GRAND TERRACE, CALIFORNIA

CH2MHILL



FIGURE 1.1-4
APPEARANCE OF SITE
AFTER CONSTRUCTION
AES HIGHGROVE
GRAND TERRACE, CALIFORNIA
CH2MHILL